CLASS VI GRID DESCRIPTION
ELK HILLS A1-A2 PROJECT

Model Domain

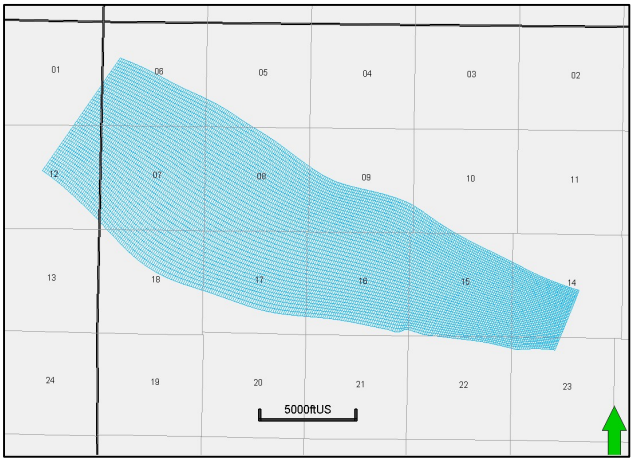
A static geological model developed with Schlumbergers Petrel software, commonly used in the petroleum industry for exploration and production, is the computational modeling input. It allows the user to incorporate seismic and well data to build reservoir models and visualize reservoir simulation results. Model domain information is summarized in Table 1.

Table 1. Model domain information.

Coordinate System	State Plane		
Horizontal Datum	NAD 83		
Coordinate System Units	Feet		
Zone	CA83-VF		
FIPSZONE	0405	**ADSZONE**	3376
Coordinate of X min	6,095,241.81	**Coordinate of X max**	6,122,433.26
Coordinate of Y min	2,302,015.15	**Coordinate of Y max**	2,316,903.12
Elevation of bottom of domain	-10,426.35	**Elevation of bottom of domain**	-6,670.36

The geo-cellular grid is uniformly spaced throughout the 6.4 square mile model area (Figure 1) at 150 feet x 150 feet. The model is oriented at 55 degrees, which is aligned with both the structural trend of the anticline and the depositional environment. Model boundaries were selected to define plume extent and the peripheral area of elevated pressure.

Figure 1: Plan view of the model boundary showing the extent of the CO2 plume that defines the AoR.



The reservoir has been separated into two zones, A1 and A2 sands, with 8 and 13 layers (Figure 2) respectively and an average grid cell height of 11.5 feet. Grid resolution is a balance between simulation run-time and retaining reservoir heterogeneity for assessing CO_2 movement. Well data that defines the stratigraphy also defines the structure of the Monterey Formation A1-A2 storage reservoir. Each well drilled has a deviation survey used to establish the measured depth and depth sub-sea of each surface.

Figure 2: Static model layering of the Monterey Formation A1-A2 reservoir. The stratigraphic units either pinch-out up-dip or reservoir sands transition to shale.